



THE FEDERAL SMALL BUSINESS  
**SUMMIT**

**NEW MEXICO STATE UNIVERSITY**

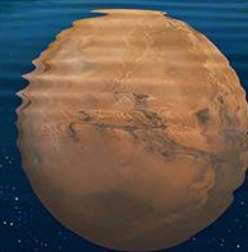
**NASA White Sands Test Facility & Jacobs  
Procurement**

**Jessica Doak, Contracts  
Joe Bullington, Commercialization Manager  
Jacobs Technology  
August 15, 2019**



# EXPLORE MOON<sub>to</sub>MARS

NASA White Sands Test Facility Overview





# WSTF Location



# WSTF Background

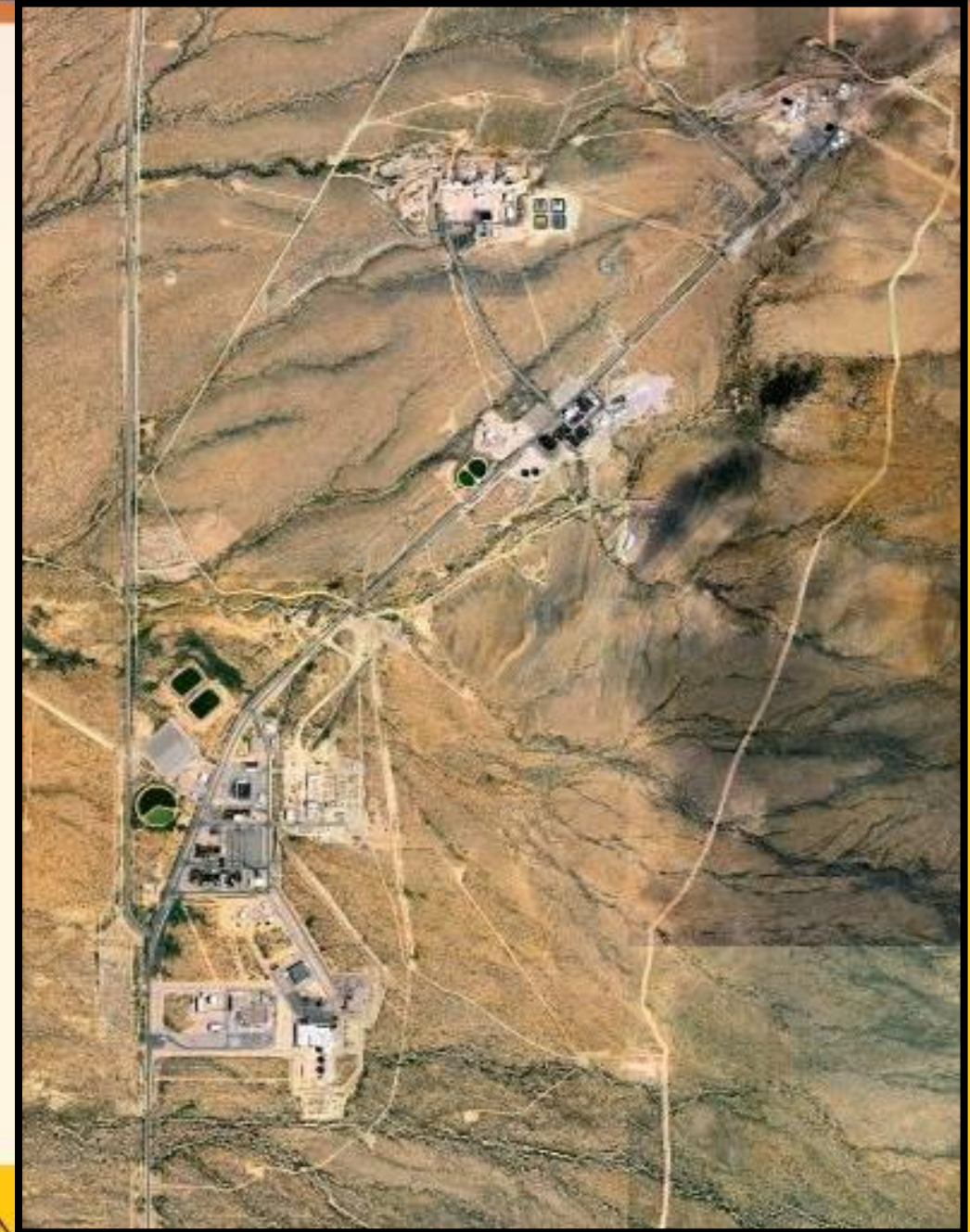
- Constructed 1962-64 to Support Apollo Project
- Component Facility of NASA Johnson Space Center
- Occupies 28 square miles of the SW Corner of White Sands Missile Range (WSMR)
- Annual Budget ~\$85 Million (FY18)
- Headcount – 662
  - 47 NASA
  - 19 JSC matrixed
  - 596 Contractor





## WSTF Background (Con't)

- Large Buffer Zone and Controlled Remote Property for Hazardous Testing
- Moderate Desert Climate Ideal for Year-round Testing
- Environmental Permits in Place for Hazardous Testing





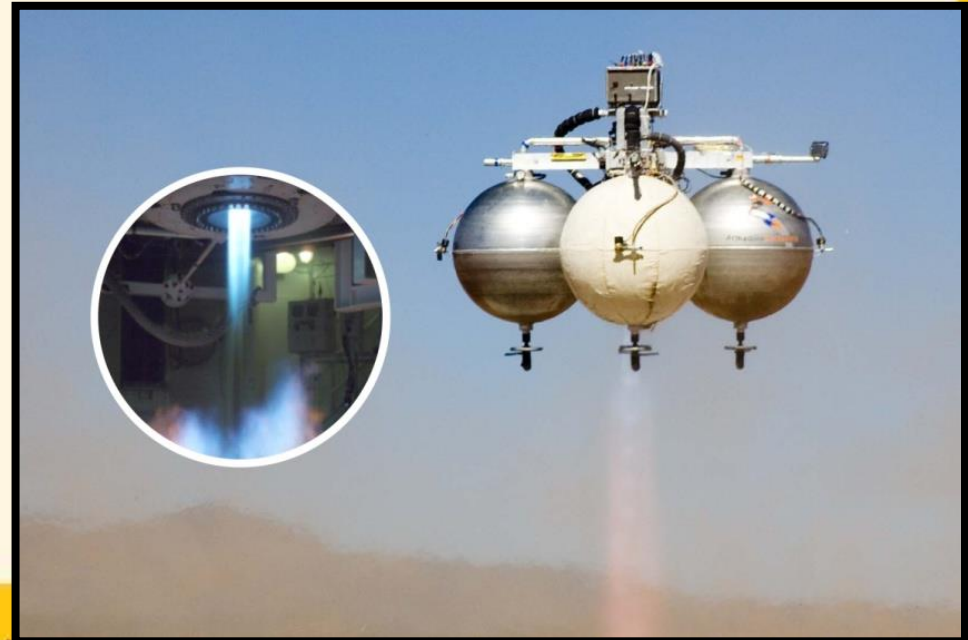
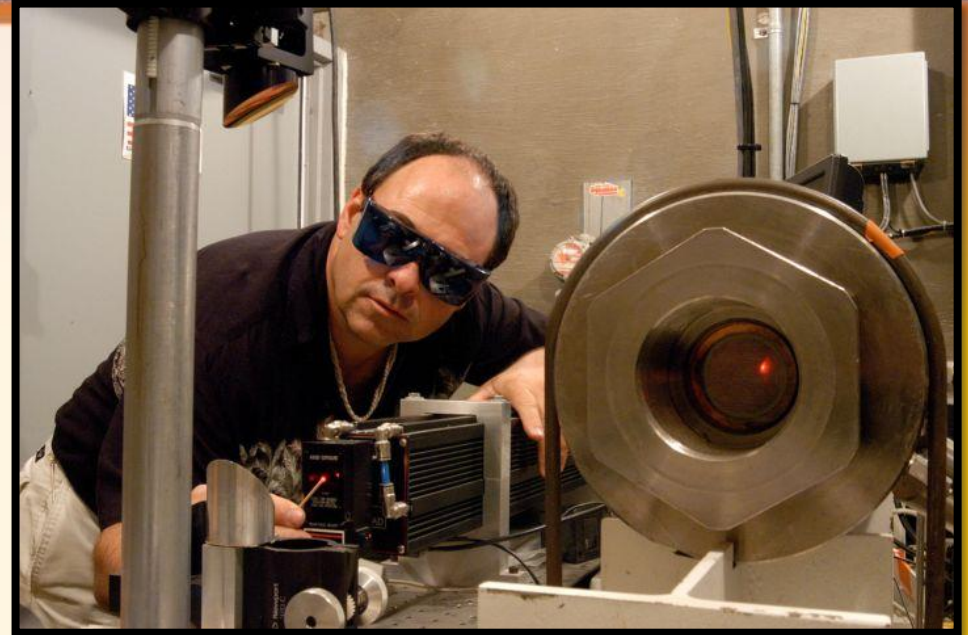
# Customer Base

- **Johnson Space Center** - International Space Station, Payloads, Crew Training, and Special Projects
- **NASA Headquarters** and Other Field Centers; Orion, SLS, Commercial Crew
- **Other US Government Agencies** - ADF-SW, Army, EPA, DOD (Defense Advanced Research Projects Agency), DOE, DOT (National Highway Traffic Safety & Federal Aviation Administrations), Navy Research Lab, USAF, and VAFB



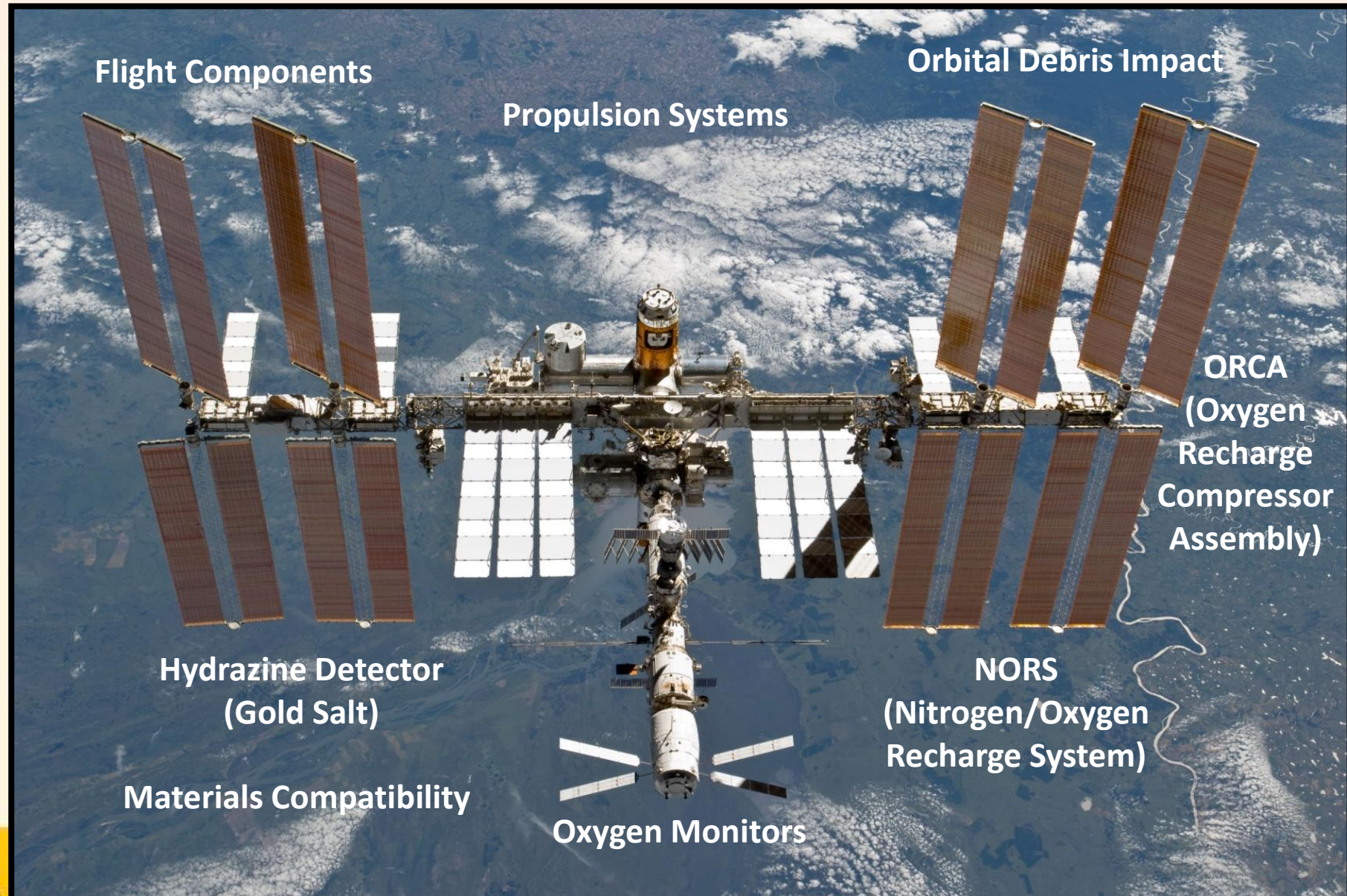
## Customer Base (Con't)

- **Commercial Industry -**
- Aerojet, Armadillo Aerospace, ASTM G4 Community, Blue Origin, Boeing, Cobham, National Center for Manufacturing, Orbital Sciences Corp, Pratt & Whitney, Scaled Composites, Inc., SpaceX, and WHA International





# International Space Station (ISS)





# Orion

Crew Cabin Materials  
and Experiment

Hypervelocity Impact Testing  
(Orbital Debris Impact)

Payloads

Materials Compatibility

Engine Testing

Offgassing

Propulsion Thruster  
Maintenance and Repair

Composite Overwrapped  
Pressure Vessels



# Space Launch System (SLS)

Engine Testing

Materials Compatibility

Composite Overwrapped  
Pressure Vessels

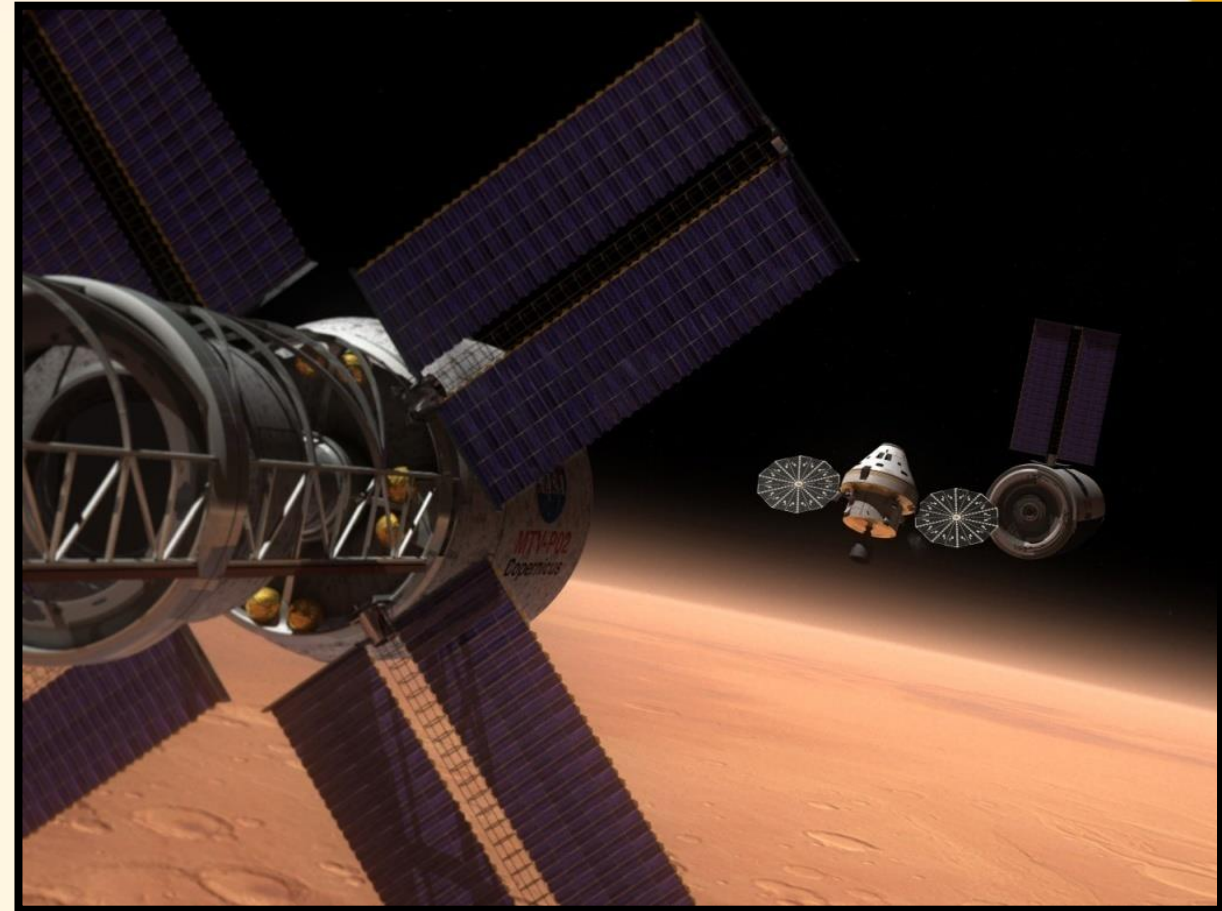
Offgassing

Payloads



# Core Capabilities

- Rocket Propulsion Testing and Evaluation
- Oxygen Systems Testing and Analysis
- Propellants and Aerospace Fluids Testing and Analysis
- Hypervelocity Impact Testing
- Composite Pressure Systems Testing and Analysis
- Flight Acceptance Standard Test
- Spaceflight Component Services



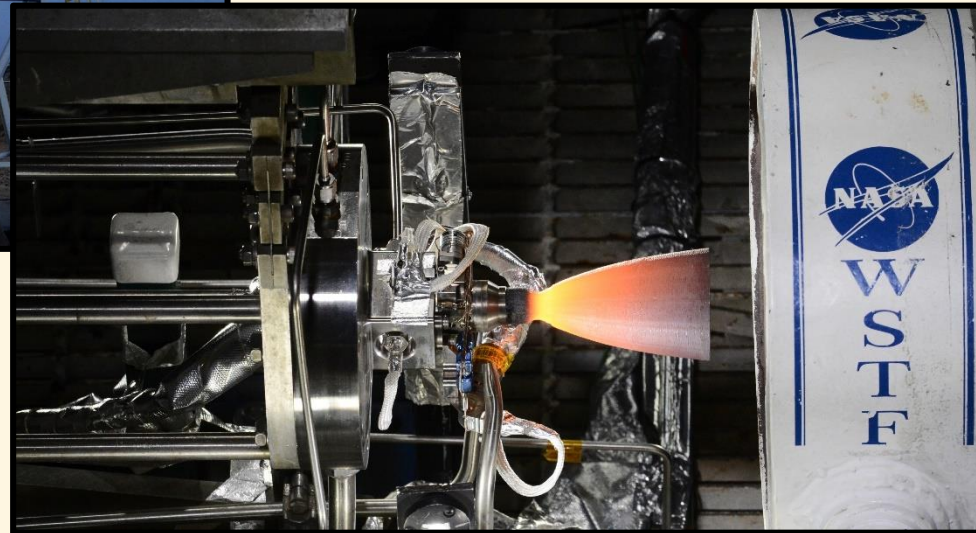


# Rocket Propulsion Testing and Evaluation



Boeing CST-100  
Service Module on Test  
Stand 301A in Preparation  
for Hotfire Testing

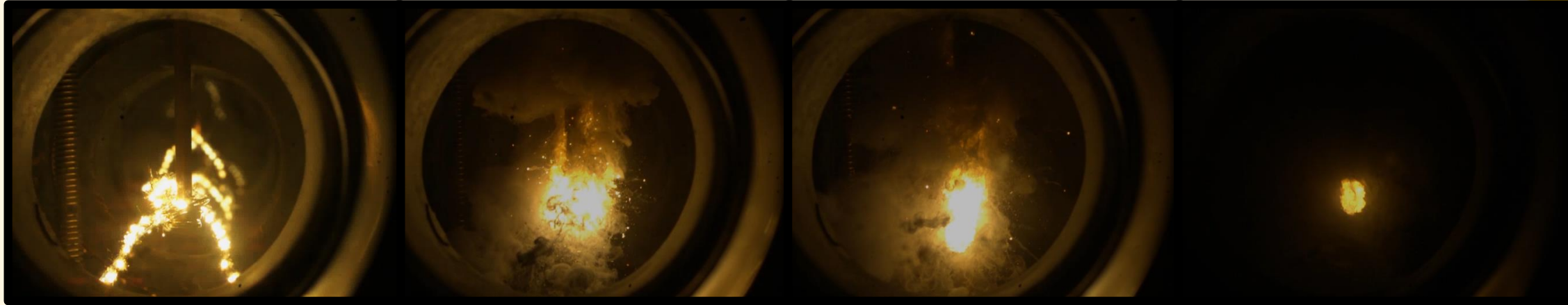
Boeing CST-100  
Launch Abort Engine (LAE)  
Acceptance Testing



Reaction Control System (RCS)  
Boeing CST-100  
Acceptance Altitude Testing



# Oxygen Systems Testing and Analysis



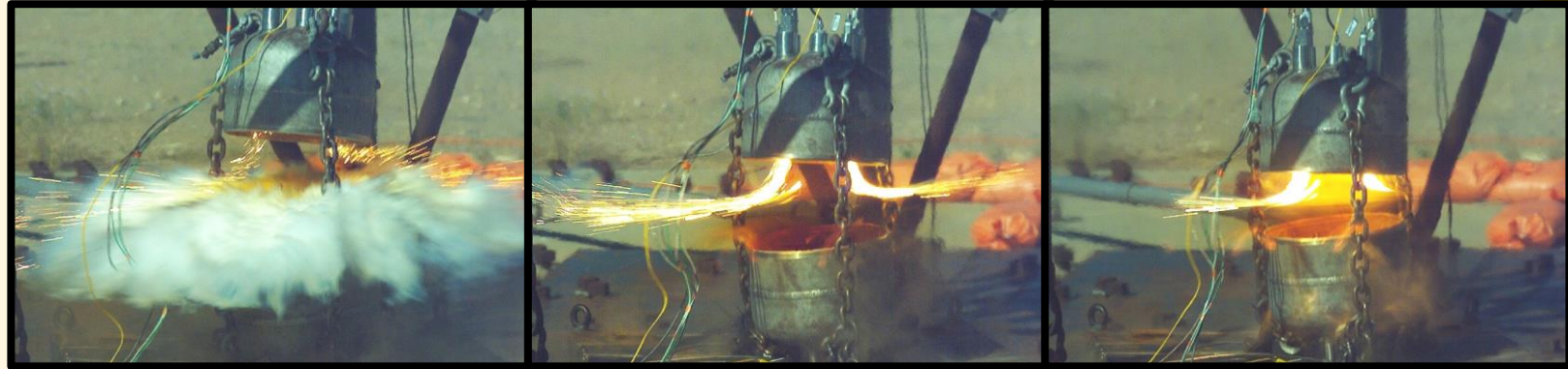
Promoted Ignition of a Copper Rod in 1000 psi Oxygen



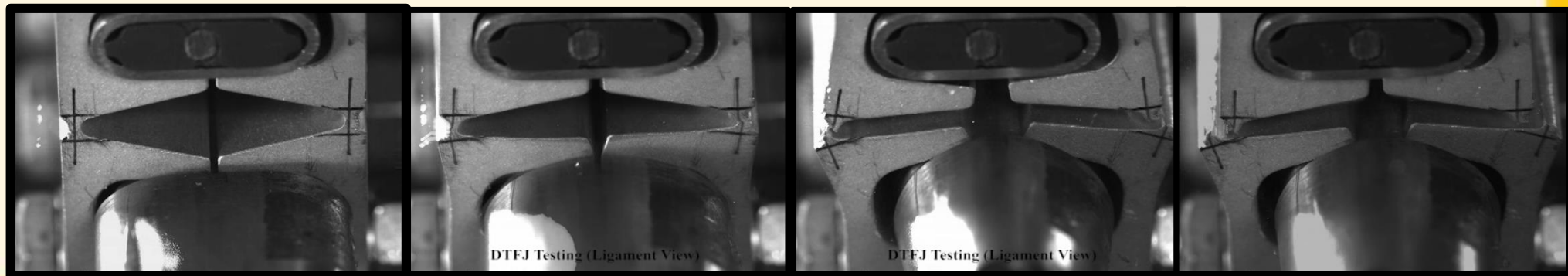
Ignition of a Teflon Hose in 1000 psi Oxygen



# Propellants and Aerospace Fluids Testing and Analysis



Propellants and Characterization Testing



DTFJ Testing (Ligament View)

DTFJ Testing (Ligament View)

Dual Tube Frangible Joint Test



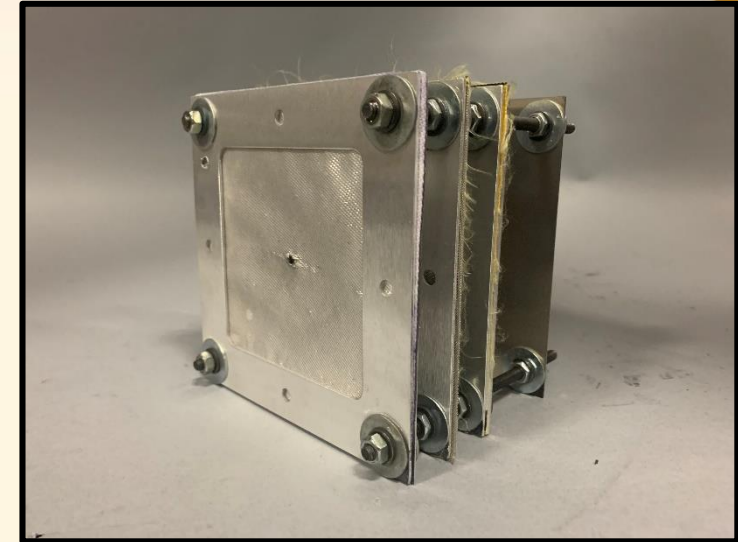
# Hypervelocity Impact Testing



ISS Soyuz Vehicle Descent  
Module Test Article



COPV Target

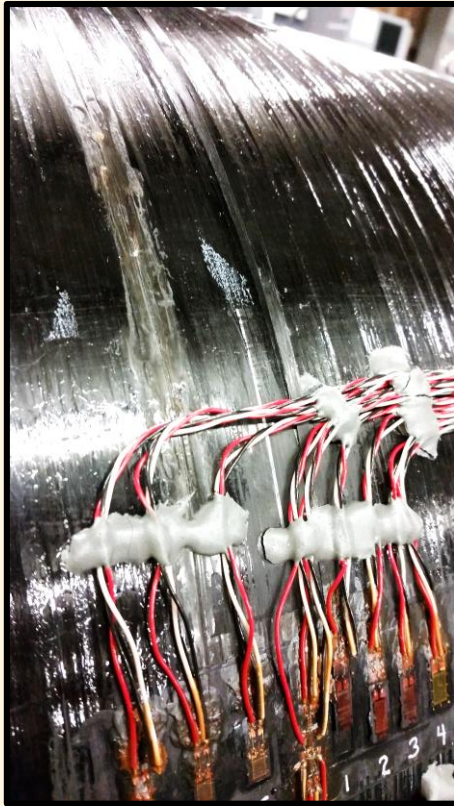


Whipple Shield

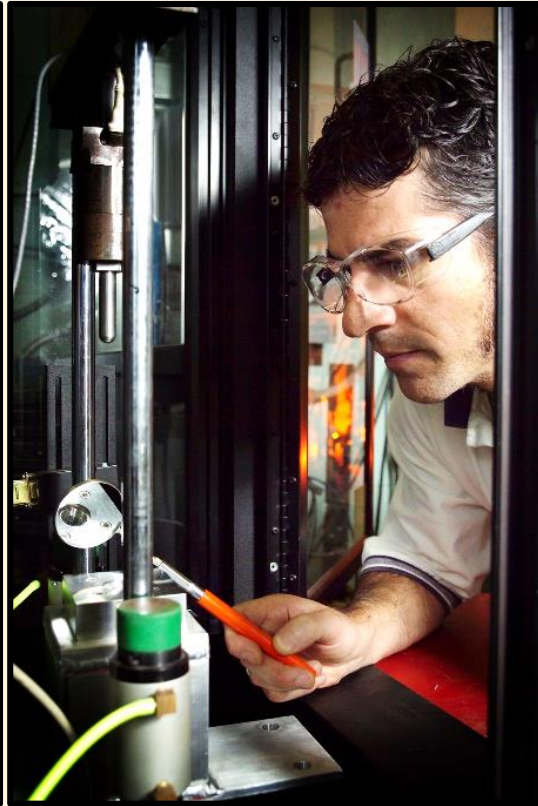




# Composite Pressure System Testing and Analysis



Broken COPV Fiber



Mechanical Impact  
Testing



Thermal De-Ply  
Analysis



Post-Test COPV MMOD  
Burst Test Article



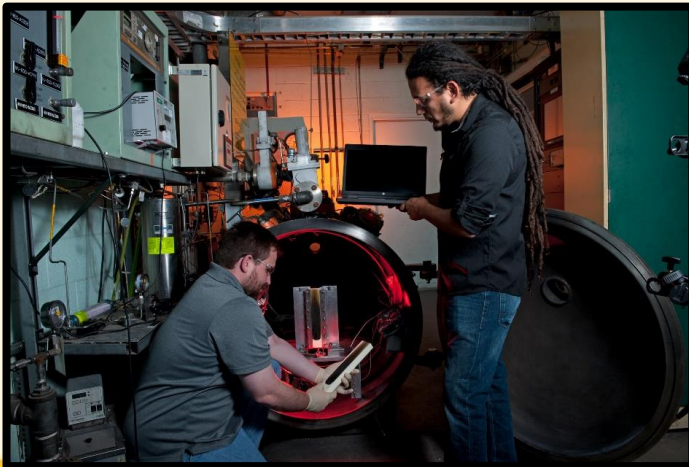
# Flight Acceptance Standard Test



Odor



Offgass Toxicity



Upward Flammability



Heated Promoted Combustion



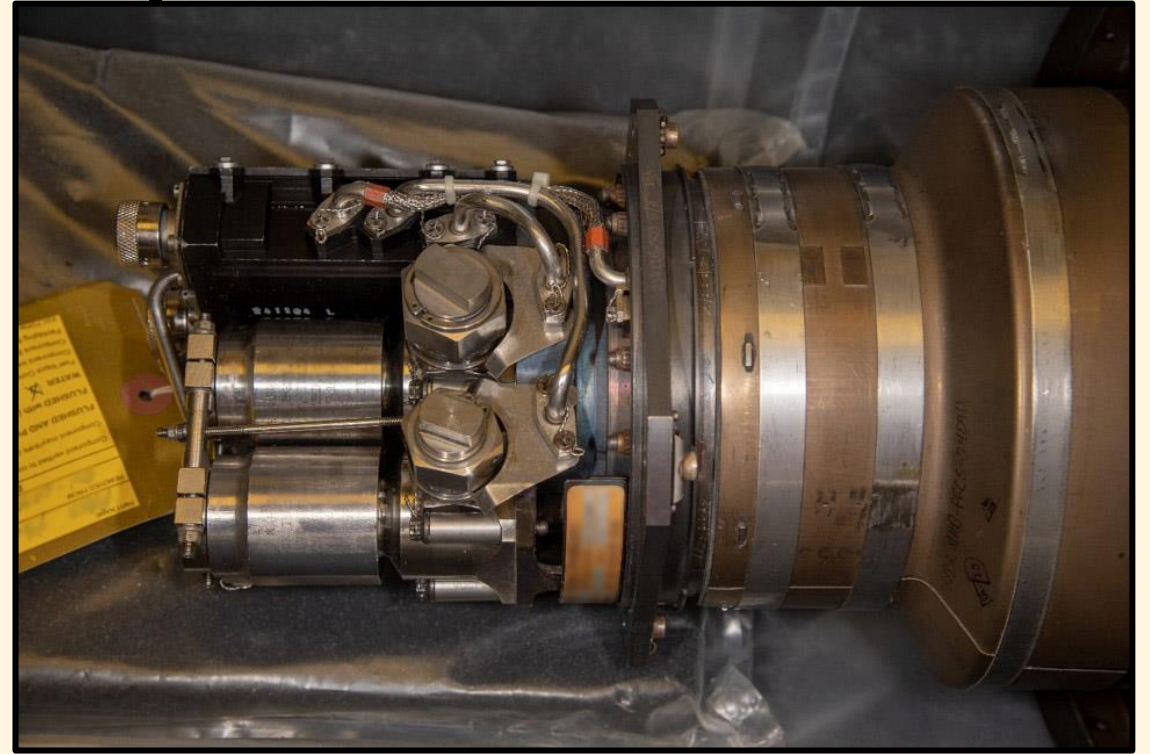
LOX Mechanical Impact



# Spaceflight Component Services (SCS)



OMS Engine Setup and Test Preparation



R40b Thruster



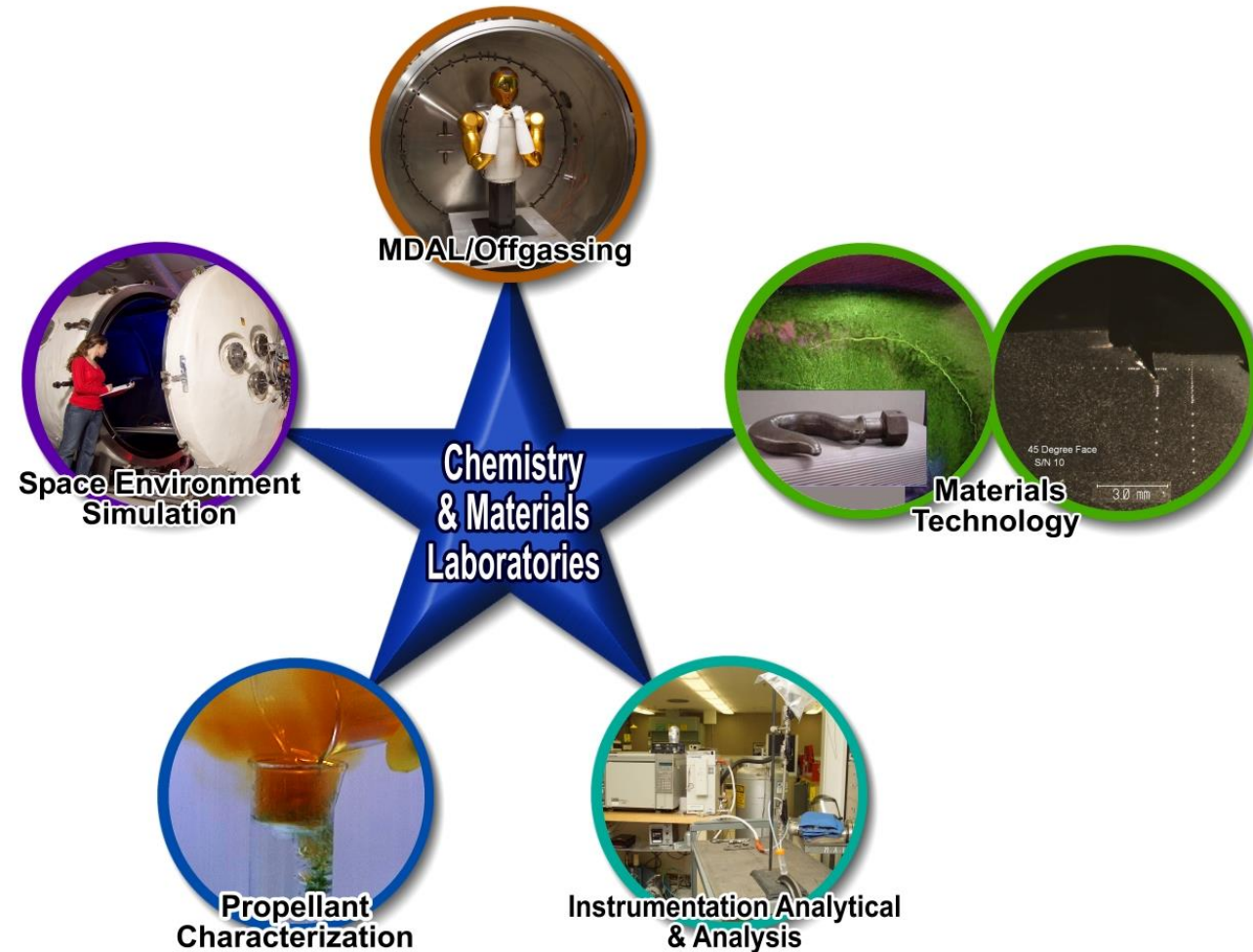
# Test Facilities

- Rocket Engine System Test Stands with Vacuum
- Long-duration Large-altitude Simulation System
- Full-scale Hypergolic and Cryogenic Propulsion Test Systems
- Chemistry and Metallurgical Laboratories
- Flight Component Repair, Refurbishment, and Test Facilities
- High Energy Blast Facility
- Oxygen-enriched Atmosphere Test Facilities
- Hypergolic Materials and Components Test Facilities
- Remote Hypervelocity Test Laboratory Impact Test Facilities



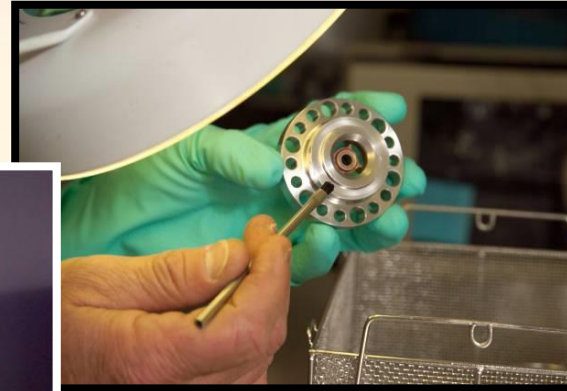
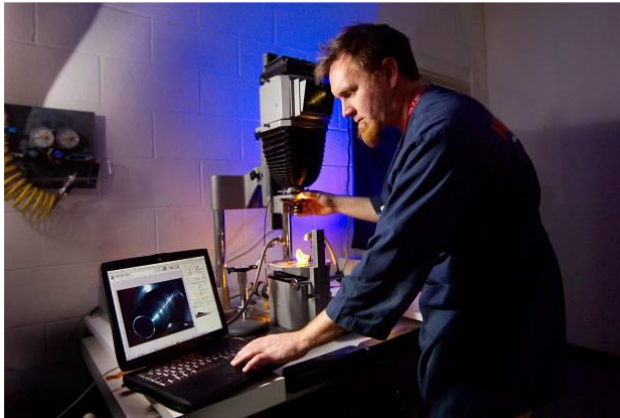


# Enabling Capabilities Chemistry and Materials Laboratories





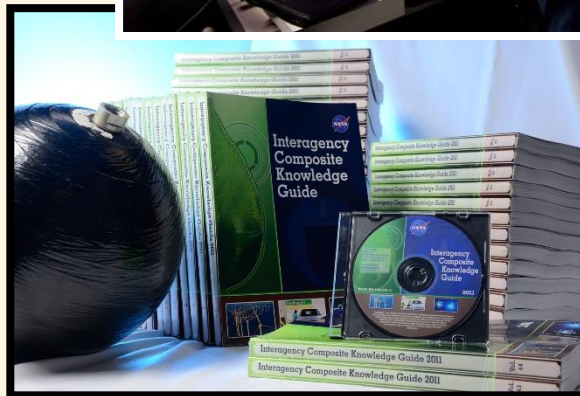
# Enabling Capabilities Technical Services



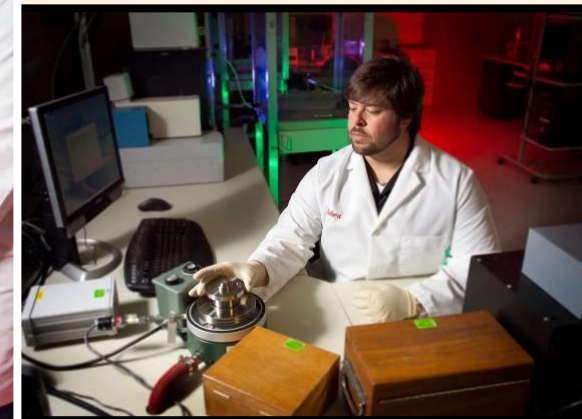
**Precision Cleaning of Flight  
Critical Items**



**Measurement Standards  
and Calibration Lab**



**Industrial and Scientific Imaging and  
Documentation**





# Enabling Capabilities



Machine



Weld



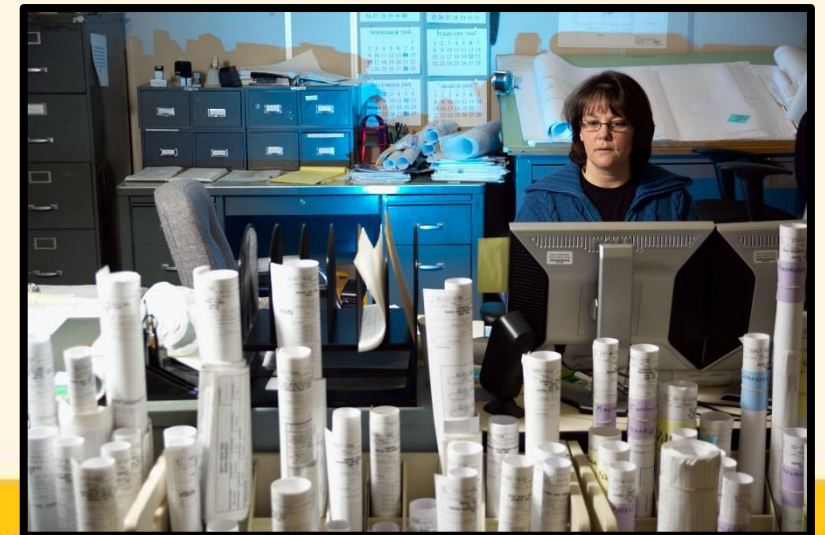
Valve Repair



# Enabling Capabilities

## Safety & Mission Assurance

- Performance and Configuration Mgt
  - Work Coordination, Asset Mgt, Project Leads, Drawing Control, Logistics
- Operations and Design
  - Design, Facility Maintenance, Electrical, HVAC, Heavy Equipment, and Plumbing





# Enabling Capabilities

## Safety & Mission Assurance

- Quality
- Safety
- Emergency Management Services





# Environmental

Environmental Compliance



Propellant Wastewater and  
Container Management

Environmental Restoration



Plume-Front Groundwater  
Treatment System



# WSTF Training Courses

- Oxygen Systems: Operation & Maintenance
- Fire Hazards in Oxygen Systems
- COPV Damage Detection Course
- Composite Pressure Systems and Structure NDE
- Hydrogen Training
- Hypergolic Propellants Training
- Standard Testing Course





- **Doing Business with**
- **Jacobs Technology**
- **at the**
- **NASA White Sands Test Facility**



# Jacobs Partnership with WSTF

- Jacobs Technology Inc. is the prime test and evaluation contractor to NASA Johnson Space Center White Sands Test Facility (WSTF) located in southern New Mexico. Although our partnership with NASA began in 2006, WSTF has supported every U.S. human exploration space flight program since Project Apollo in the early 1960s.
- Jacobs at WSTF plays a key role in the nation's space effort through synergy to test and evaluate spacecraft materials, components, and rocket propulsion systems to enable the safe human exploration and utilization of space for NASA Centers, other government agencies and commercial industry. Our next goal? Explore Moon to Mars.



# Jacobs Purchasing for WSTF

- **Our Commitment to Small Business**
  - It is Jacobs' policy to promote the participation of Small Business in supplying materials and services and is essential for us to meet our contractual commitment to NASA WSTF. We also recognize the advantages in using Small Businesses in our day-to-day performance across the NASA complex.



# WSTF / Jacobs Information

- **Site Awards & Certifications**
  - ISO 9001:2015 & 14001:2015 Certified
  - OSHA Voluntary Protection Program (VPP) Star Site
  - 2016 GreenGov Purchasing Power Award



# What We Buy

- **Materials**

- Aerospace materials and componentsAmmunition
- Automotive Parts
- Chemicals / Solvents
- Communications Equipment
- Computers and Peripherals
- Construction Materials/Concrete
- Deionized Water System Supplies
- Equipment Rental
- Electrical/Mechanical/Electronic Components
- Paint
- Rupture Disks / Relief Valves
- Stainless Steel Tanks
- Safety & PPE Equipment
- Tubing/Piping



# What We Buy

- **Services**

- Architectural & Engineering
- Construction
- Consulting
- EDM Equipment
- Equipment Calibration
- Janitorial
- Pest Control
- Safety-Related Training Courses
- Special coating application



# How To Do Business with our Facility

- **NASA White Sands Test Facility (WSTF) Procurement:**

- WSTF is a remote test facility for Johnson Space Center (JSC)
- Procure major prime and agency-wide contracts
- Procure propellants and other cryogenic fluids (nitrogen and oxygen)
- For more info:
  - NASA procurement info at FedBizOpps: [www.fbo.gov](http://www.fbo.gov)
  - NASA OSBP website: <https://osbp.nasa.gov/> or mobile app
  - NASA Vendor Database: <https://vendors.nvdb.nasa.gov>
  - WSTF: [www.nasa.gov/centers/wstf](http://www.nasa.gov/centers/wstf) to learn more about WSTF

- **Jacobs Technology Procurement:**

- Procure a wide variety of products & services, as shown on the previous slides
- Complete and submit the Jacobs Exhibit X (Seller Abstract) form to be added to our small business database
- Visit [www.jacobs.com](http://www.jacobs.com) to learn more about Jacobs

# • QUESTIONS?

- Jessica L. Doak
- Subcontract Administrator
- Small Business Specialist
- Jacobs Technology, Inc.
- NASA White Sands Test Facility
- 575-524-5180
- [jessica.l.doak@nasa.gov](mailto:jessica.l.doak@nasa.gov)

**Joe Bullington**  
**Commercialization Manager**  
**Jacobs Technology**  
**NASA White Sands Test Facility**  
**Office: 575-525-7660**  
**Cell: 575-202-5581**  
[joe.bullington@nasa.gov](mailto:joe.bullington@nasa.gov)  
[joe.bullington@jacobs.com](mailto:joe.bullington@jacobs.com)